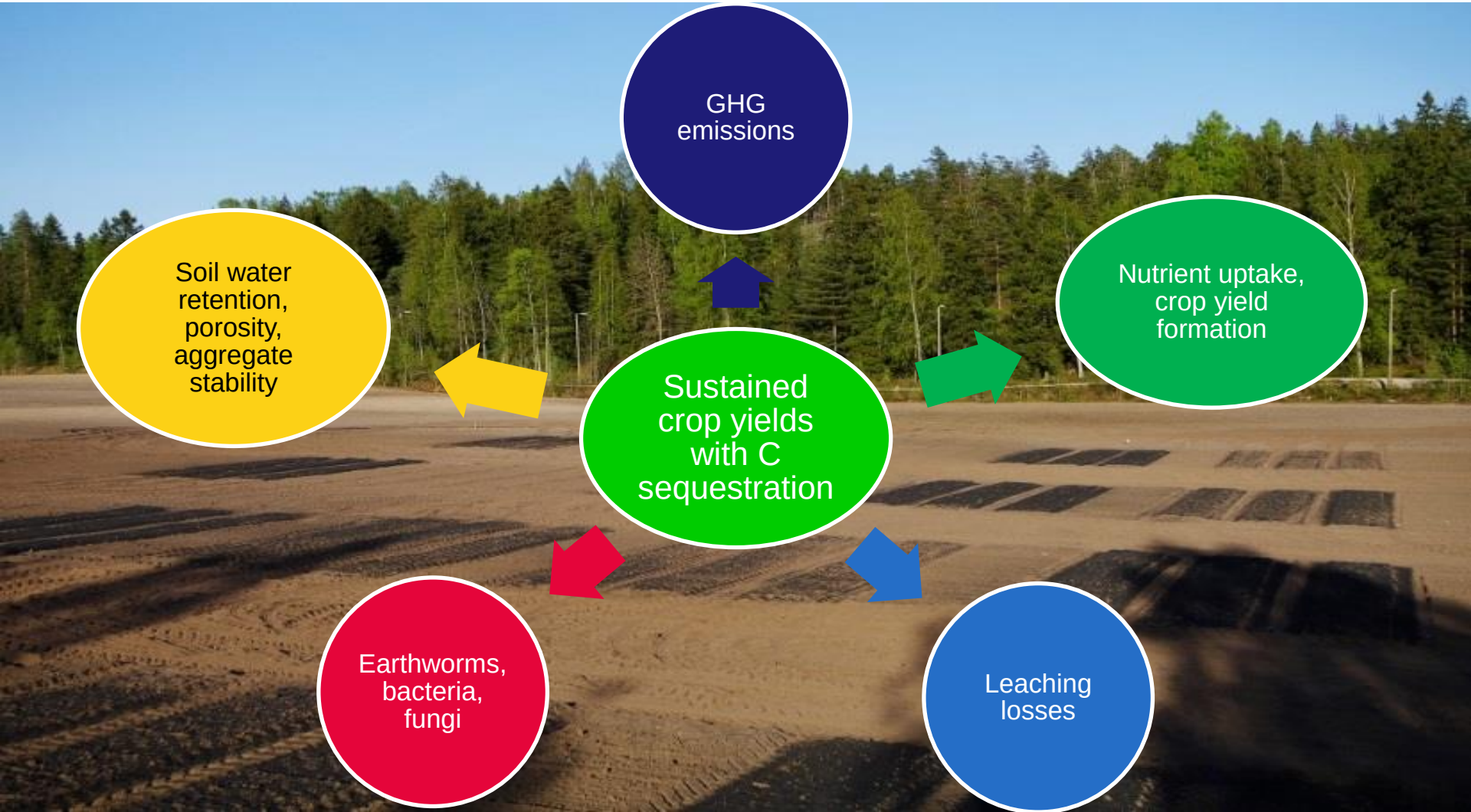
Long-term effects of softwood biochars on boreal soils: results from two experiments through 13 years on soils, nutrient cycling and crops

Dr. Priit Tammeorg

Subin Kalu, Kristiina Karhu, Asko Simojoki

AgriChar field experiments in Helsinki with all major Finnish crops since 2010

http://biochar-hy.blogspot.com/



Long-term fertilization effect for P, K, S, Cu & Fe

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Long-term effects of softwood biochar on soil physical properties, greenhouse gas emissions and crop nutrient uptake in two contrasting boreal soils

Subin Kalu [a,b,*], Asko Simojoki [c], Kristiina Karhu [b], Priit Tammeorg [a]

- BC own nutrients
- Interactions with soil nutrients

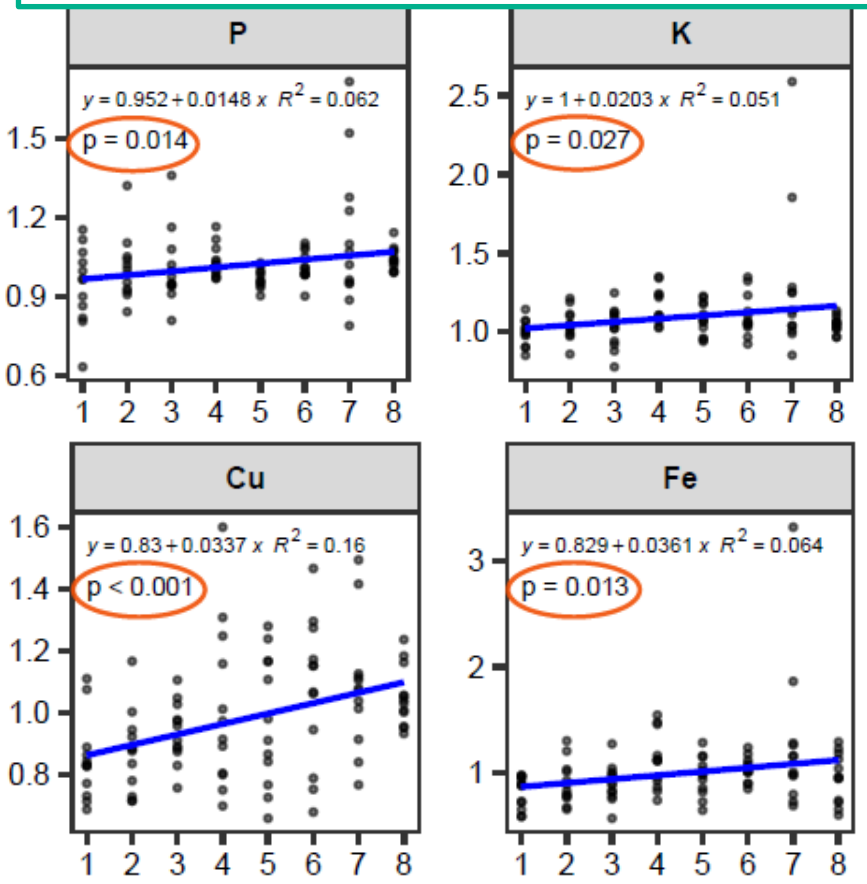
frontiers | Frontiers in Environmental Science

Potential of Biochar to Reduce Greenhouse Gas Emissions and Increase Nitrogen Use Efficiency in Boreal Arable Soils in the Long-Term

Subin Kalu [1,2]*, Liisa Kulmala [3,4], Jure Zrim [1], Kenneth Peltokangas [1,3,4], Priit Tammeorg [1], Kimmo Rasa [5], Barbara Kitzler [6], Mari Pihlatie [1,4,7] and Kristiina Karhu [2,8]

Kalu et al. 2022

BC effect to crop biomass nutrient concentration over 8 years, Stagnosol



Increased barley yield 65% and reduced yield-normalized emissions of CH_4 and N_2O from coarse-textured soil after 7 years

Kalu et al. 2021

AgriChar research group biochar-hy.blogspot.com

PI Priit Tammeorg: *Sustainable biochar systems, closing nutrient cycles*
Subin Kalu: *The biochar effects on nutrient cycles*
Jure Zrim: *Effects of biochars and other soil amendments on soil biota*
Mina Kiani: *Recycling P from waterbodies*
Mari Unnbom: Recycling fertilizers
Samuel Amoah: Best way to activate biochars in field scale

Many thanks!